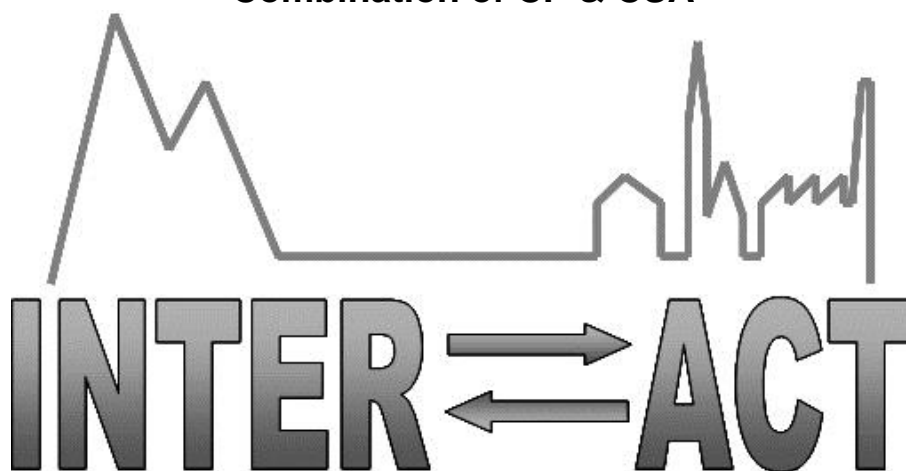


### Combination of CP & CSA



## D6.3- First year-round data on GHG

Project No.262693– INTERACT

**FP7-INFRASTRUCTURES-2010-1**

Start date of project: 2011/01/01  
Due date of deliverable: 30/06/2013 (M17)

Duration: 48 months  
Actual Submission date: 11/02/2014

Lead partner for deliverable: ULUND  
Author: Torben R. Christensen

Dissemination Level		
<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the Consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the Consortium (including the Commission Services)	

---

## Table of Contents

<b>Publishable Executive Summary</b> .....	<b>3</b>
<b>1. Overview</b> .....	<b>4</b>
1.1. First year-round GHG data.....	4
1.2. Energy exchange available from multiple sites .....	4

---

## Publishable Executive Summary

This deliverable aimed to provide year-round data on greenhouse gas exchange using basic infrastructure established at relevant INTERACT sites within WP 6 during the first period of the project. Further energy exchange measurements were added to seven out of ten towers as part of the deliverable as a clear wish was expressed from the climate and feedback modelling community which requested improvement of the availability of these types of data. Despite many practical and technical hurdles we can now report that the goals of this deliverable have been achieved. The data have been gathered and together with data from continuous future measurements will be made available from a central server placed at ULUND.

## 1. Overview

### 1.1. *First year-round GHG data*

Greenhouse gas flux measurements have been established at seven of the ten INTERACT towers, spread across four INTERACT sites participating within this WP. The challenge was to measure these fluxes year-round, which is not an easy task in the harsh Arctic environment, particularly because power has to be supplied by solar and wind at all the Greenlandic sites and on Svalbard. The cold and dark winter therefore poses not only a challenge to the instrumentation, but also to the power supply.

Nonetheless, the first year of GHG measurements is now available from the Abisko palsa site. In addition, data is available for all 4 seasons during multiple years from the other participating INTERACT stations. We are continuously monitoring the operation of the towers, and have upgraded the power situation with windmills where needed. These efforts will ensure a better year-round coverage at all sites in this demanding environment.

Data is stored at a central server placed at ULUND. Subsequent tasks will analyse and publish finding from the data (D6.4) and then the data will be widely available.

### 1.2. *Energy exchange available from multiple sites*

This part of the deliverable was late as we have experienced some unforeseen and unfortunate problems with the net radiometers purchased for the energy exchange stations. This is a central instrument for the setup we have established at ten towers near four of the INTERACT stations. The supplier of the net radiometers, Kipp and Zonen (the lead manufacturer of this equipment), has admitted that the problems are due to mistakes at the factory and they have been working to resolve the problem. As of February 2014, most problems with the net radiometer have been resolved, although currently two net radiometers are being run in parallel at the site in Svalbard to assess whether any possible radiometer problems exist at that site. The other measurements are all in place, however, and energy exchange and eddy covariance data – the latter where available – is being uploaded to the central INTERACT server from all sites.

Energy exchange data is currently available from all ten INTERACT towers, spread over the four participating sites. We now need to quality-check and release the data and we have employed a full time research engineer to work with the quality-control of the INTERACT WP6 data. The data should be released early in 2014. For more details on the equipment installed and the current operation of the stations, we refer to the technical progress report T6.2 within the second periodic report.